

ON SOME NEW SPECIES OF NYCTERIBIIDAE
(DIPTERA: PUPIPARA)

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A small collection of Nycteribiidae received from Dr. W. L. Jellison, Rocky Mountain Laboratory, Hamilton, Montana, and Dr. R. Wenzel, Chicago Natural History Museum, Chicago, Illinois, contained three new species which are described below, and several additional distribution records.

Genus *Basilia* Miranda Ribeiro

Subgenus *Basilia* s. str.

Basilia mimoni n. sp.

Length 2.2 - 2.5 mm. Color yellowish brown.

HEAD with 4 setae at the anterior dorsal margin and 1-2 minute hairs on the vertex. Gena bare or with a few minute hairs. Palpus slender, wider at the base. Labella of labium slightly shorter than the theca.

THORAX about as long as wide. Median sternal suture distinct, the oblique sutures forming an angle of about 85°. The hairs on the sternal plate are longer posteriorly; the posterior margin with a row of short setae and 2 longer setae in each half. Mesonotum parallel-sided, not very wide, posterior plate without a process. Lateral plates of the notopleural sutures with 10-12 notopleural setae which stand more closely posteriorly. Mesopleural suture narrow, distinct. Thoracic ctenidium with 18-20 narrow, pointed spines. Legs long and slender. Tibiae 5-6 times longer than wide, with 3 rows of setae in the middle of the ventral surface; the distal row consists of longer setae which reach the end of the tibia or beyond; the setae of the other two rows are short. The ends of the tibiae are long and tapering (Fig. 1).

ABDOMEN MALE. Tergite I with a straight posterior margin with a row of short setae. Tergites II - IV with a single marginal row of moderately long setae of uniform length which stand more closely together laterally; a few spines between the setae in the middle of the row. Tergite II with 1 - 2 rows of short setae on the surface, 4 - 8 such setae on tergite III in an irregular double row, and only 2 - 4 short setae on tergite IV. Tergite V similar, but 2 - 4 setae in the middle of the marginal row are longer and there are about 8 short vertical setae between these long setae; surface bare. Tergite VI similar, but much less wide, with 4 long setae in the middle of the marginal row. Anal segment conical, with 3 - 4 long setae posteriorly, 2 short setae in the middle of the dorsal surface and a few short setae in the posterior half of the surface and at the sides.

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Sternite I + II with a ctenidium of 42 - 44 spines, shorter than in the female. Sternites III and IV with uniform marginal rows of moderately long setae, and 4 long vertical setae in the marginal row of sternite IV. The surface of sternite III with 2 - 3 rows of short setae; only one row, which is interrupted in the middle, on the surface of sternite IV. Sternite V similar in shape, rectangular, with a rounded bulge in the middle of the posterior margin which bears a group of 14 - 16 spines in two rows; the 4 median spines of the posterior row are longer than the others; long horizontal setae stand at the margin lateral to the group of spines and there is a preapical row of long and short setae; surface otherwise bare (Fig. 2).

GENITALIA (Figs. 2-3). Claspers thin, tapering, black apically; a long seta dorsally near the base and 3 shorter setae in the basal half. Basal arc large, rounded, with a long anterior process. Phallobase strongly concave dorsally, with 2 setae near the base. Aedeagus broad, with a rounded or truncate end and a few teeth dorsally on the basal part. Paramere with a pointed apex, ventral margin rounded in the distal half; a few minute hairs on the sides.

ABDOMEN FEMALE (Figs. 4-5). Tergite I trapezoidal, with a row of setae at the posterior margin and a gap in the middle; with 2 or 3 median setae next to the gap which are longer; a few small spines on the surface. Tergal plate II rather short, divided in the middle, with 1 - 2 long, apical setae on the posterior processes, and 4 - 6 shorter setae at the posterior lateral margins; some short setae along the median division line and some in the anterior and lateral part of each half. A slightly curved pigmented stripe runs from the posterior processes to the shoulders; there are no setae on these stripes. Tergal plate III absent. Pleurae and lateral parts of the dorsum covered with short setae, leaving a bare median stripe from the posterior processes of tergal plate II to the anal segment. A row of slightly longer and stronger setae along the posterior margin of the anterior bulge of the abdomen. Anal segment rectangular, much wider than long, bare dorsally and with a long and 1 - 2 shorter setae posteriorly and a few short setae laterally. Postspiracular sclerite narrow, curved, with 3 longer setae at the end and a few minute spines along the posterior margin. Sternite I + II long, with a ctenidium of about 50 long, pointed spines and short setae in the posterior part of the surface and laterally. Sternite III long, with a uniform row of moderately long setae posteriorly and about 6 rows of short setae on the surface which are shorter posteriorly; a few long vertical setae in the last row of the surface. Sternite IV with a similar marginal row and only one row of short setae on the surface which is double laterally. Sternite V laterally with 2 narrow sclerites, each with a straight posterior and a rounded anterior margin; two long, vertical setae at the lateral corners of each sclerite, and with 4 - 5 horizontal setae towards the middle and 2 - 3 shorter vertical setae near the margin. Sternite VI undivided, with strongly convex anterior and slightly convex posterior margin, with 2 long vertical setae at the posterior lateral corners and shorter

horizontal setae along the posterior margin; 1 or 2 rows of short, vertical setae on the surface. Sternite VII rounded posteriorly, more strongly sclerotized laterally, with several moderately long setae laterally and posteriorly. Anal sclerite small, drop-shaped, with two setae; not connected with the genital plate. Adanal plates triangular, with 2-3 setae at the distal end; near their proximal ends are two small, sclerotized areas with a scaly surface. Genital plate with 4 setae and a triangular field of small spines anterior to it (Fig. 6).

Basilia mimoni belongs to the *ferruginea* group of the subgenus which has posterior processes on tergal plate II, absence of tergal plate III, and sternite VI undivided. Among the species of the group it resembles *B. rondanii* and *B. silvae*. It differs from *B. rondanii* in the female in having only 4 setae on the anterior margin of the head, in the form of the tibiae, in the absence of a median process on the posterior plate of the mesonotum and in the chaetotaxy of the abdomen. It has only 1-2 setae on the posterior processes of tergal plate II, while *B. rondanii* has 4-6 such setae. In the male it differs in the arrangement of the spines on sternite V and in the genitalia.

B. mimoni differs from *B. silvae* in having 10-12 notopleural setae, in the female in having longer setae at the posterior margin of tergite I, a much shorter tergal plate II with only 1-2 setae on the posterior processes, shorter setae on the pleurae and a different anal segment. There are 14-16 spines in a compact group on sternite V in the male, while there are 20 such spines in *B. silvae*, and the genitalia are different.

B. mimoni is also closely related to *B. tiptoni*, a species recently described from Panama, but differs from it in the absence of a digitiform process on the posterior plate of the mesonotum, in the absence of posterior processes on tergite I of the female, and in the much shorter tergal plate II with only 1-2 setae on the posterior processes (*B. tiptoni* has 4 such setae), the shorter setae on the pleurae and a different form of the anal segment. In the male it differs in having 14-16 spines on sternite V, some of which are longer than the others, while there are only 11 such setae of about equal length in *B. tiptoni*.

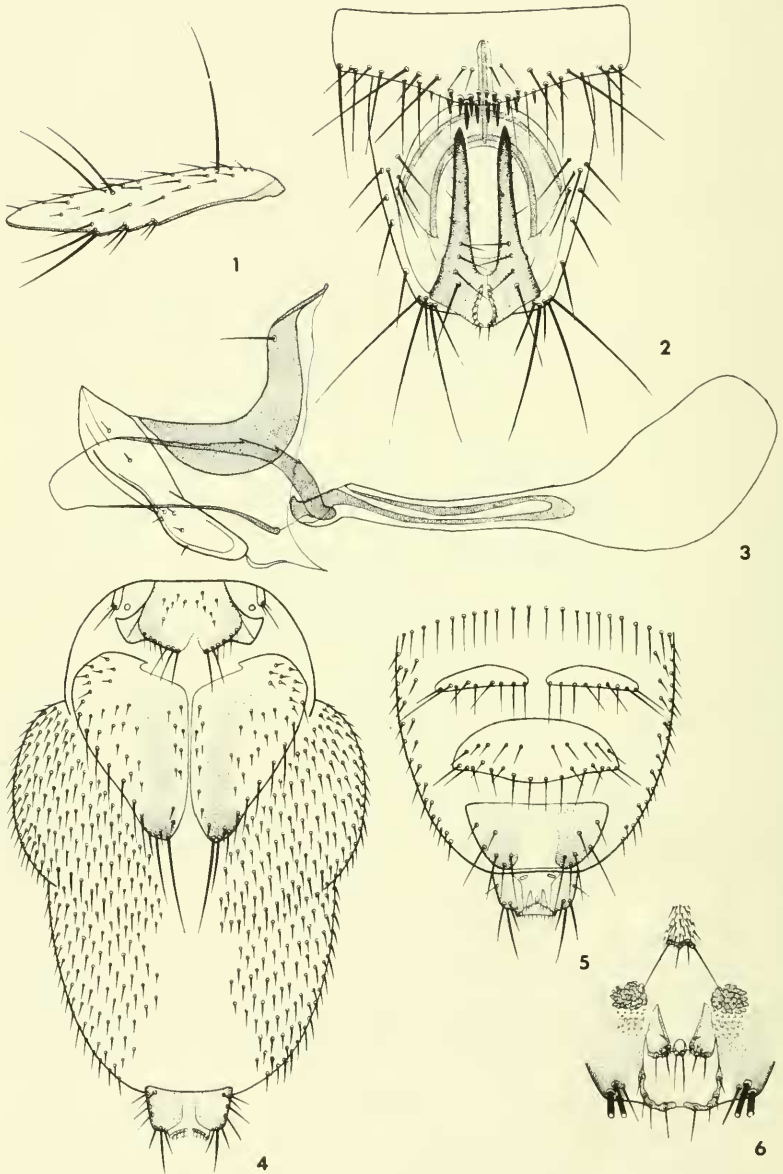
Holotype female, 2 male and 5 female paratypes in the Chicago Natural History Museum. One male and one female paratypes in the Department of Parasitology, Hebrew University, Jerusalem. Host: *Mimon crenulatum*, Rio Yavary, Department Loreto, Peru, October 2, 1957. Coll. Celestino Kalinowski. Zool. Peru Exped. 1956-57.

Basilia jellisoni n. sp.

♀. Length 2.2. mm. color yellowish, possibly bleached.

HEAD with 6 setae at the anterior dorsal margin. Labella of the labium half the length of the theca.

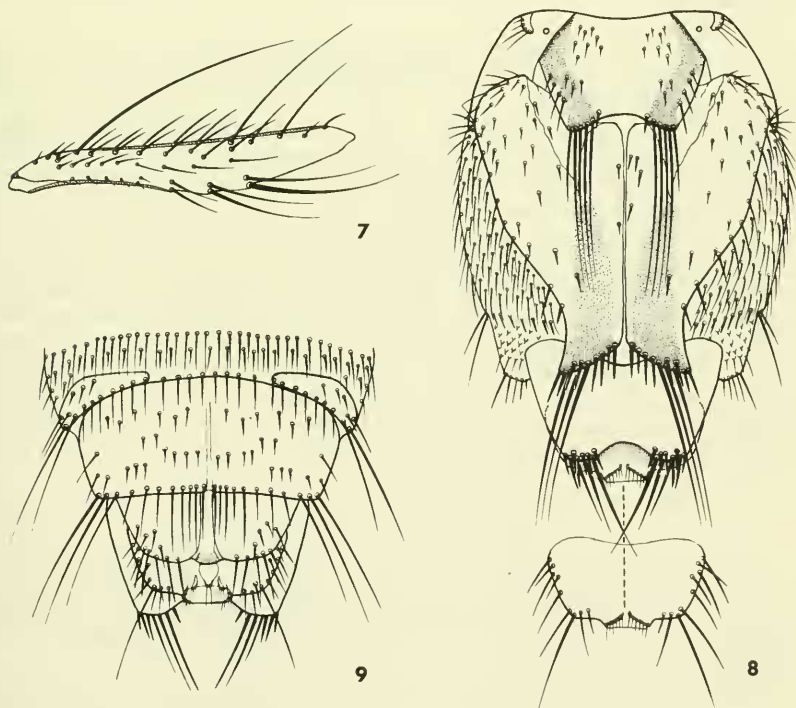
THORAX wider than long; length to width = 3 : 4. Median sternal suture widened in the middle; oblique sutures forming an angle of about 90°. Posterior margin with a row of short setae and 1-2



Figs. 1-6, *Basilia mimoni* n. sp. 1, mid tibia. Figs. 2-3, male. 2, sternite V and genital area; 3, genitalia. Figs. 4-6, female. 4, abdomen, dorsal; 5, abdomen, posterior part, ventral; 6, anal and genital plates.

longer setae laterally. Mesonotum wide, posterior plate without a process. Lateral plate of the notopleural suture wide, with 10 notopleural setae. Tibiae very long, slender; mid tibia 6 times longer than wide, with 3 rows of setae in the middle of the ventral margin, those of the distal row long, reaching beyond the tip of the tibia (Fig. 7).

ABDOMEN (Figs. 8-9). Tergite I hexagonal, with two groups of 4 very long and one shorter setae at the posterior margin and a wide gap between the two groups; several short setae laterally at the posterior margin; a pigmented stripe along the lateral margins and a few short setae on the surface. Tergal plate II long, heart-shaped, with broad, truncate posterior processes which bear 3 long setae, an irregular, double row of 8-10 very long spines, and with 4-6 shorter setae at the posterior lateral margins; some short, thick setae on the surface, some along the median division line, the others lateral to a broad, pigmented stripe which runs from the posterior processes into the middle of each half. Tergal plate III very large, trapezoidal, bare on the surface and with a group of 2-3 long setae and about 6 long spines at the posterior lateral corners and a concave gap between them; both setae and spines shorter than on tergal plate II. Anal segment, in dorsal view, nearly completely covered by



Figs. 7-9, *Basilia jellisoni* n. sp., female. 7, mid tibia; 8, abdomen and anal segment, dorsal; 9, abdomen, posterior part, ventral.

tergal plate III; it is wider than long, bare on the surface and has 1 - 2 longer setae posteriorly and shorter setae laterally. Pleurae with numerous setae of moderate length and very short spines posteriorly. Postspiracular sclerite narrow, curved, with 3 longer setae at the end and very short spines along the posterior margin. Sternite I + II very wide, with a ctenidium of 64 long, pointed spines. Sternites III and IV with longer setae at the posterior margin, sternite III covered with short setae. Sternite IV with a similar marginal row and apparently no setae on the surface. This is difficult to make out, since the specimen is contracted. Sternite V with 2 widely separated narrow sclerites with 2 long setae at the lateral corners, shorter setae towards the middle and a few setae on the surface. Sternite VI large, broad, rectangular, with straight posterior margin, long setae at the posterior lateral corners and shorter setae which stand more closely in the middle at the posterior margin; several rows of short setae on the surface. Sternite VII much narrower, rounded posteriorly, incompletely divided in the middle and with a small, rounded process in the middle of the posterior margin; long setae at the sides of the posterior margin and 4 - 5 shorter setae on the surface in the posterior lateral part. Anal sclerite with 2 setae at the apex, widening basally. Adanal plates triangular, with a few short setae at the end. Genital plate with 4 setae.

MALE unknown.

The single specimen available (M-395) was collected from *Myotis yumanensis* taken at Frenchtown, Missoula Co., Montana, July 7, 1958, by F. Bell.

These data are uncertain and thus provisional, but it seems desirable, however, to have the specimen described as it shows a number of unusual characters. Female holotype in the Chicago Natural History Museum.

Only four American species of *Basilis* possess a 3rd tergal plate. Of these, *B. antrozoi* and *B. pizonychus* differ from *B. jellisoni* in the shape of tergal plate II, in the divided tergal plate III and other characters. *Basilis anomala* differs in the shape of the posterior processes of tergal plate II and the spines on them, the different shape of tergal plate III, the setae on the pleurae and the different shape of sternites V and VI. *Basilis forcipata* differs in the much shorter tergal plate II, the presence of setae on the surface of tergal plate III, the much longer anal segment and other characters.

Basilis magnoculus Schuurmans-Stekhoven, 1942

Zeitschr. Parasitenk. 12:533

The species belongs to the *nattereri* group of the subgenus and has reduced, weakly pigmented eyes, consisting usually of a single ocellus, sometimes of two. It was described from Java from *Myotis horsfieldi* and *Scotophilus temmincki*, and it is also known from Amboina.

The specimen recorded here (A.P. 23473) is a female from *Myotis horsfieldi* collected by W. L. Jellison in Borneo, November, 1941.

Basilia pudibunda Schuurmans-Stekhoven, 1941

Bull. Hist. Nat. Belg. 17:1

This species also belongs to the *nattereri* group and is easily recognized by the characteristic structure of tergal plate II which is divided into four longitudinal parts.

The species was described from Boentok in Borneo from a vespertilionid bat. It has also been found in Thailand on *Myotis horsfieldi*, in Indochina on *Cynopterus brachyotis angulatus*, and in East Sumatra.

The specimen recorded here (A.P.23512) is a female from *Myotis horsfieldi* collected in Singapore by W. L. Jellison in November, 1941.

Subgenus *Tripselia* Scott, 1917*Basilia (Tripselia) triseriata* Theodor

The species has been described from a single male from Selangor, Malaya, from *Nyctalus stenopterus* in a revision of the family which is now in press.³ The holotype is in the Chicago Natural History Museum.

The specimen recorded here (A.P.23475) is also a male, from Malaya, from *Nyctalus stenopterus*, collected by W. L. Jellison in November, 1941.

Genus *Penicillidia* Kolenati, 1863*Penicillidia godivae* n. sp.

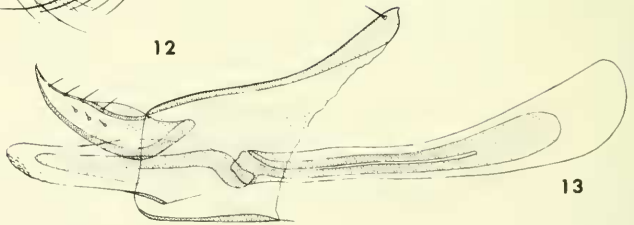
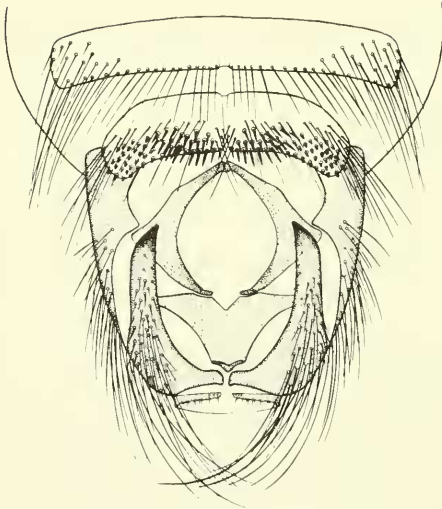
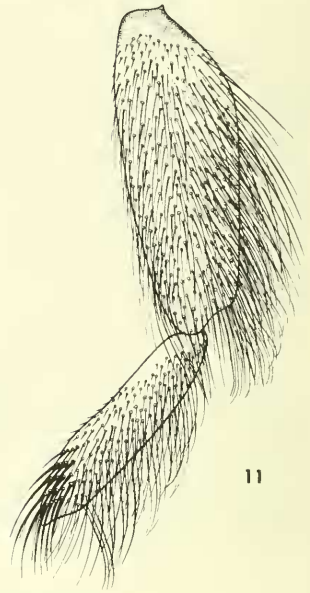
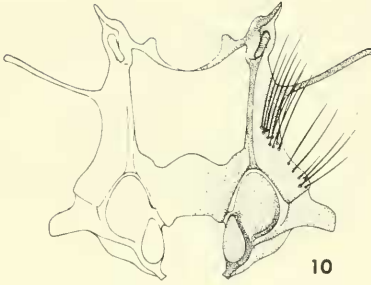
MALE. Length 4 mm. Color light brown, probably bleached.

HEAD. The whole dorsal surface densely covered with long, light brown setae. Eyes small, little protruding above the surface. Palpus wide, ventral surface covered with numerous setae, the terminal seta not differentiated. Labella of labium about as long as the theca.

THORAX. Wider than long; length to width = 2 : 3. Mesonotum wide, nearly parallel-sided with a large posterior plate. About 15 notopleural setae which are double anteriorly and posteriorly, the row is single in the middle and the setae more widely spaced. Lateral plate of the notopleural suture narrow, parallel-sided (Fig. 10). Femora very thick, twice as wide as the tibiae, uniformly covered with long thin setae on the anterior and dorsal surface. Tibiae slender, 4.5 times as long as wide, with 4 rows of long setae, the distal row very near the tip and reaching beyond it; dorsal side thickly covered with long, thin setae (Fig. 11).

ABDOMEN. Tergite I broadly rounded, with pigmented rounded stripes laterally. Tergites II - VI and anal segment uniformly and densely covered with long, thin, light brown setae. Sternite I + II rounded, with a ctenidium of 40 short spines which are longer laterally; the spaces between the spines are as wide as the spines in the middle and slightly wider laterally; some long preapical setae laterally and a few short setae between the spines. Sternites III and

³ O. Theodor, An illustrated catalogue of the Nycteribiidae in the Rothschild Collection and the British Museum. In press.



Figs. 10-13, *Penicillidia godivae* n. sp., male. 10, dorsal pattern of thorax; 11, mid leg; 12, sternites IV and V and genital area; 13, genitalia.

IV short and wide, with marginal rows of long setae laterally and shorter setae in the middle; some setae laterally on the surface, middle bare. Sternite V much less wide, concave posteriorly, incompletely divided in the middle, with two flat, rounded, lateral processes with about 30 short, thick spines which are characteristic for the *dufourii* group; adjacent to them, towards the middle, two groups of longer spines in 2-3 rows which reach nearly to the middle, and between them a few thin setae; anterior to the spines, a row of long, thin setae and a group of such setae laterally (Fig. 12).

GENITALIA (Figs. 12-13). Clasper thick, slightly curved, with a dark point and many setae on the dorsal side in the basal half. Basal arc with triangular halves. Basal plate triangular, with an indentation anteriorly. Two short setae near the base of the phallobase. Aedeagus straight, with rounded tip and small spines at the ventral side of the anterior membranous end. Paramere triangular, with a curved ventral margin and a relatively long, pointed tip; 4 short setae at the dorsal margin and a few minute hairs at the sides.

FEMALE unknown.

The species belongs to the *dufourii* group and is the first representative of this group to be found outside the Palaearctic Region. It differs from the other species of the group in the absence of long and strong setae which are replaced by a large number of very fine and long setae. The male differs also in the arrangement of the spines on sternite V and in details of the genitalia.

Holotype male (A.P.23474) from *Pipistrellus ridleyi*, Singapore, November, 1941. Coll. W. L. Jellison. Type deposited in the Chicago Natural History Museum.